

Docket No. HOE97/F143

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE


Applicants: Sievers et al. Confirmation No.: 8152  
Serial No.: 09/730,463 Examiner: Wyrozebski Lee, K.I.  
Filed: December 5, 2000  
For: NANOPOROUS INTERPENETRATING ORGANIC-INORGANIC  
NETWORKS

Facsimile No.: 1-571-273-1127  
(Total Number of Pages, including this sheet: 4)

Attention: K. Wyrozebski  
Mail Stop AF  
COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

CERTIFICATE OF TRANSMISSION BY FACSIMILE

I hereby certify that the attached "Interview Summary" is being transmitted by facsimile to the Commissioner for Patents, Alexandria, VA 22313-1450, on June 30, 2004.

  
Robert M. Amici  
Reg. No. 52,554  
Cabot Corporation  
157 Concord Road  
Billerica, MA 01821  
Tel. No. (978) 670-7031  
Return Fax: (978) 670-8027

Facsimile interview summary of

**RESPONSE UNDER 37 C.F.R. § 1.116  
EXPEDITED PROCEDURE  
EXAMINING GROUP 1714**

**PATENT**  
Docket No. HOE97/F143

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Sievers et al.

Group Art Unit: 1714

Application No.: 09/730,463

Examiner: Wyrozebski Lee, K. I.

Filed: December 5, 2000

Confirmation No.: 8152

For: **NANOPOROUS NETWORKS** **INTERPENETRATING** **ORGANIC-INORGANIC**

Mail Stop AF  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INTERVIEW SUMMARY**

Sir:

The undersigned wishes to thank Examiner Wyrozebski for the telephone interview held on June 29, 2004. The Examiner had identified Risen Jr. et al. (U.S Patent No. 6,602,336) as potentially relevant to the present claims and, in particular, claim 9. The Examiner also pointed out that the process for making the aerogel of Risen Jr. et al. was different than the present invention but requested comments concerning the product itself. During this interview, arguments concerning the differences between the cited reference and the present invention, in particular, present claim 9, were presented. The remarks below incorporate the substance of the interview.

U.S. Patent Application No.: 09/730,463  
Art Unit: 1714  
Page 2

Claim 9 of the present invention relates to an aerogel consisting of organic and inorganic networks interpenetrating on a scale of no more than 100 nm with a density of no more than 0.6 g/cm<sup>3</sup>. Thus, as recited by this claim, the aerogel has two interpenetrating networks – an organic network and an inorganic network.

With respect to the organic network, the last paragraph on page 3 of the present application states that the term “polymer” is understood to be a polymer, a polycondensate, or a polyadduct which can be crosslinked in water (see the last paragraph on page 3). The first full paragraph on page 4 discloses that preferably the organic polymer network is obtained by polycondensation. Thus, the phrase “polymer network” as used in the present application does not relate to a dispersion or dilution of a polymer in a second phase. Instead, only organic polymers, polymer precursors, or mixtures thereof capable of forming polymer networks are relevant. Therefore, the aerogel of claim 1 is a material having two networks, including an organic polymer network, rather than a mixture of a polymer within a silica aerogel network.

By comparison, Risen Jr. et al. relates to aerogels comprising silica, at least one organic polymer having polar functional groups, and at least one metal ion. The organic polymer “must have sufficient solubility to permit its incorporation in the sol and not precipitate” (see column 4, line 36-39). Also, the organic polymer “must form sufficiently strong interaction with the other constituents of the gel such that it is not extracted to a deleterious extent” (see column 4, line 39-45). Various organic polymers are disclosed (see column 5, lines 24-37) including chitosan. However, nowhere in Risen Jr. et al. is there disclosed that the organic polymer forms a network. Thus, Risen Jr. et al. discloses an aerogel that comprises an organic polymer dispersed within the silica network. While this product has a density that falls within that recited in present claim 9, the aerogel product of Risen Jr. et al. is not the same as that of the present invention.

Applicants therefore believe that the present invention and, in particular, claim 9 is patentably distinct from the disclosure of Risen Jr. et al. During the telephone interview, the Examiner stated that these points were understood.

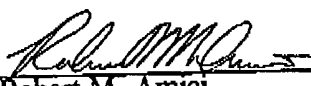
U.S. Patent Application No.: 09/730,463  
Art Unit: 1714  
Page 3

Conclusion

In view of the foregoing amendments and remarks, Applicant believes that this application is considered to be in good and proper form for allowance, and the Examiner is respectfully requested to pass this application to issue. If, in the opinion of the Examiner, a further telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

By:

  
Robert M. Amici  
Reg. No. 52,554  
CABOT CORPORATION  
Law Department  
157 Concord Road  
Billerica, MA 01821-7001

Date: June 30, 2004  
Attorney Docket No.: HOE97/F143